CLAIMS

What is claimed is:

1. A method for assigning resources to users in a slotted wireless communication system having candidate timeslots, the method comprising:

an interference level is determined for each candidate timeslot;

an amount of resources available for assignment in each candidate timeslot is determined;

a measurement of fragmentation of codes in a orthogonal variable spreading factor (OVSF) tree in each candidate timeslot is determined;

a Figure of Merit for each time slot is determined using the determined interference level, the amount of available resources and the code fragmentation in the OVSF tree for each candidate timeslot; and

the resources are assigned from the candidate timeslot having a best Figure of Merit.

2. The method of claim 1 wherein the resources are resource units in a time division duplex/code division multiple access communication system.

3. The method of claim 1 wherein the determining the Figure of Merit for an i^{th} timeslot is per

$F_i = -\alpha \cdot \Delta I_i + \beta \cdot f(C_i) + FDi$

where F_i is the Figure of Merit for the i^{th} timeslot, α and β are weighting parameters, ΔI_i is a difference between an interference signal code power (ISCP) measurement of the i^{th} timeslot and a minimum ISCP measurement of all the candidate timeslots, $f(C_i)$ is an amount of resource units that can be used by a coded composite transport channel (CCTrCH) of interest in the i^{th} timeslot and FDi is a measure of OVSF code tree fragmentation in the i^{th} timeslot.

4. A radio network controller comprising:

a radio resource management device for assigning resources to users in a slotted wireless communication system having candidate timeslots, the radio resource management device determines an interference level for each candidate timeslot, determines an amount of resources available for assignment in each candidate timeslot, determines a measurement of fragmentation of codes in a orthogonal variable spreading factor (OVSF) tree in each candidate timeslot, determines a Figure of Merit for each time slot using the determined interference level, the amount of available resources and the code fragmentation in the OVSF tree for each candidate timeslot, and assigning the resources assigned from the candidate timeslot having a best Figure of Merit.

5. The radio network controller of claim 4 wherein the resources are resource units in a time division duplex/code division multiple access communication system.

6. The radio network controller of claim 4 wherein the determining the Figure of Merit for an i^{th} timeslot is per

$F_i = -\alpha \cdot \Delta I_i + \beta \cdot f(C_i) + FDi$

where F_i is the Figure of Merit for the i^{th} timeslot, α and β are weighting parameters, ΔI_i is a difference between an interference signal code power (ISCP) measurement of the i^{th} timeslot and a minimum ISCP measurement of all the candidate timeslots, $f(C_i)$ is an amount of resource units that can be used by a coded composite transport channel (CCTrCH) of interest in the i^{th} timeslot and FDi is a measure of OVSF code tree fragmentation in the i^{th} timeslot.

7. A radio network controller for assigning resources to users in a slotted wireless communication system having candidate timeslots, the radio network controller comprising:

means for determining an interference level for each candidate timeslot;

means for determining an amount of resources available for assignment in each candidate timeslot;

means for determining a measurement of fragmentation of codes in a orthogonal variable spreading factor (OVSF) tree in each candidate timeslot;

means for determining a Figure of Merit for each time slot using the determined interference level, the amount of available resources and the code fragmentation in the OVSF tree for each candidate timeslot; and

means for assigning the resources from the candidate timeslot having a best Figure of Merit.

8. The radio network controller of claim 7 wherein the resources are resource units in a time division duplex/code division multiple access communication system.

9. The radio network controller of claim 7 wherein the determining the Figure of Merit for an i^{th} timeslot is per

$F_i = -\alpha \cdot \Delta I_i + \beta \cdot f(C_i) + FDi$

where F_i is the Figure of Merit for the i^{th} timeslot, α and β are weighting parameters, ΔI_i is a difference between an interference signal code power (ISCP) measurement of the i^{th} timeslot and a minimum ISCP measurement of all the candidate timeslots, $f(C_i)$ is an amount of resource units that can be used by a coded composite transport channel (CCTrCH) of interest in the i^{th} timeslot and FDi is a measure of OVSF code tree fragmentation in the i^{th} timeslot.

10. A method for determining an amount of orthogonal variable spreading factor (OVSF) code fragmentation, the method comprising:

determining a number of used codes and an actual number of blocked codes;

using a look-up table, determining a optimum number of blocked codes based on the number of used codes; and

subtracting the optimum number of blocked codes from the actual number of blocked codes as an indicator of the amount of OVSF code fragmentation.

11. A method for radio bearer release in a slotted communication system using orthogonal variable spreading factor (OVSF) code trees, the method comprising:

a radio bearer is released and resource units of the radio bearer are released in timeslots used by the radio bearer; and

pruning a OVSF code tree of each timeslot having released resource units only within that timeslot.

12. A method for reducing code tree pruning a slotted communication system using orthogonal variable spreading factor (OVSF) code trees, the method comprising:

determining when a user is blocked during call admission control; and

only performing code tree pruning when the user is blocked during call admission control.